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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/509,433	05/30/2000	ROBIN WALTER MILLS	MBM1420	9540
28213	7590	01/24/2008	EXAMINER	
DLA PIPER US LLP			NEGRON, ISMAEL	
4365 EXECUTIVE DRIVE			ART UNIT	PAPER NUMBER
SUITE 1100			2885	
SAN DIEGO, CA 92121-2133			MAIL DATE	DELIVERY MODE
			01/24/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No.	Applicant(s)
	09/509,433	MILLS ET AL.
	Examiner	Art Unit
	Ismael Negron	2885

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 12 December 2007.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 32-38 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 32-38 is/are rejected.
- 7) Claim(s) 33 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 4/2/2007.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application
- 6) Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed on December 12, 2007 has been entered. Claims 32-38 have been amended. No claim has been cancelled, or added. Claims 32-38 are still pending in this application, with claim 32 being independent.

Claim Objections

2. Claim 33 is objected to because of the following informalities: it recites the limitation "*the one or more heat pipe*" in line 2. There is insufficient antecedent basis for this limitation in the claim.

The cited lack of antecedent instances do not amount to indefiniteness under 35 U.S.C. 112, second paragraph, since is readily apparent that the claims are referring back to the previously recited single heat pipe with the "one or more" phrase resulting from a typographical oversight. However, appropriate correction is required to place the claims in proper form for allowance.

3. The Examiner respectfully suggests amending Claim 33 as follows:

CLAIM 33. The optical irradiation device according to claim 32 further comprising a fan or Peltier device proximate to the ~~one or more~~ heat pipe.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 32-38 are rejected under 35 U.S.C. 102(b) as being anticipated by MASAMI et al. (U.S. Pat. 4,729,076).

6. MASAMI et al. discloses an illumination device having:

- **a plurality of light emitting diodes (as recited in Claim 32),**
Figure 4, reference number 1;
- **the plurality of light emitting diodes being for emitting radiation (as recited in Claim 32),** inherent;
- **a heat pipes (as recited in Claim 32),** column 2, lines 30 and 31;
- **the plurality of light emitting diodes being thermally connected to the heat pipe (as recited in Claim 32),** column 2, lines 25-34;
- **all of the plurality of light emitting diodes being at an end of the heat pipe (as recited in Claim 32),** as evidenced by Figure 5;
- **a unitary thermal connector (as recited in Claim 32),** Figure 4, reference number 2;
- **the unitary thermal connector directly connecting the light emitting diodes and the heat pipe (as recited in Claim 32),** as evidenced by Figure 4;

- **the heat pipe conducting heat away from the light emitting diodes (as recited in Claim 32), column 2, lines 25-34;**
- **a fan or Peltier device proximate to the heat pipe (as recited in Claim 33), column 2, lines 32 and 33;**
- **a heat sink (as recited in claims 34 and 35), Figure 4, reference number 4;**
- **the heat sink being in thermal contact with the heat pipe (as recited in claims 34 and 35), column 2, lines 28-32;**
- **the heat pipe providing means for cooling the light emitting diodes such that the light emitting diodes are capable of being driven to produce more radiation than they would be capable of without the heat pipe (as recited in Claim 36), inherent;**
- **the light emitting diodes being a plurality of light emitting diodes (as recited in claims 37 and 38), as seen in Figure 4;**
- **the plurality of light emitting diodes being formed in one or more clusters (as recited in Claim 37), as seen in Figure 4; and**
- **the plurality of light emitting diodes being formed in one or more arrays (as recited in Claim 38), as seen in Figure 4.**

Response to Arguments

7. Applicant's arguments filed December 12, 2007 have been fully considered but they are not persuasive.
8. Regarding the Examiner's rejection of Claim 32 under 35 U.S.C. 102(b) as being anticipated by MASAMI et al. (U.S. Pat. 4,729,076), the applicant argues that the cited reference fails to disclose all the features of the claimed invention, specifically all of the plurality of light emitting diodes being at an end of the heat pipe.
9. Regarding the Examiner's rejection of claims 33-38 under 35 U.S.C. 102(b) as being anticipated by MASAMI et al. (U.S. Pat. 4,729,076), the applicant presents no arguments.

In response to applicant's arguments that MASAMI et al. failed to disclose individually all of the light emitting diodes being at an end of the heat pipe, the applicant is respectfully advised that while the claims of issued patents are interpreted in light of the specification, prosecution history, prior art and other claims, this is not the mode of claim interpretation to be applied during examination. During examination, the claims must be interpreted as broadly as their terms reasonably allow. *In re American Academy of Science Tech Center*, 70 USPQ2d 1827 (Fed. Cir. May 13, 2004). The applicant is further advised that it has been held by the courts that "comprising" (which is synonymous with "including," "containing," or "characterized by") is inclusive or open-

ended, and does not exclude additional, unrecited elements or method steps. See *Mars Inc. v. H.J. Heinz Co.*, 71 USPQ2d 1837 (Fed. Cir. 2004).

In this case, MASAMI et al. discloses a plurality of LED 1 mounted on a circuit board 2 disposed on a board 3, such board including a plurality of heat sink 4. MASAMI et al. further states that the heat generated by the LED 1 is led to the heat sink 4 so that heat can be efficiently dissipated from the surface of the heat sink 4. A heat pipe 12 is used for thermally connecting the board 3 to the heat sink 4 when not integrally made. One end of the heat pipe 12 is coupled to the LED supporting board 3, with a centrally located group of the plurality of LED 1 being positioned at the end of the heat pipe 12 (as evidenced by Figure 5E(1)). While, as argued by the applicant, not all of the LED disclosed by MASAMI et al. are located at the end of the heat pipe 12, as claimed, it is also a fact that a sub-group of such plurality is indeed located at the end of the heat pipe 12, as claimed. The cited sub-group of LED was considered to meet the "all of the plurality of LED being at an end of the heat pipe" limitation as such centrally located plurality of LED 1 are indeed at an end of the heat pipe 12, the rest of the plurality of LED (i.e. those not positioned at the end of the heat pipe 12) being allowed by the use of open ended language.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

11. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ismael Negron whose telephone number is (571) 272-2376. The examiner can normally be reached on Monday-Friday from 9:00 A.M. to 6:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jong-Suk (James) Lee, can be reached on (571) 272-7044. The facsimile machine number for the Art Group is (571) 273-8300.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications maybe obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, go to <http://pair-direct.uspto.gov>. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) toll-free at 866-217-9197.

/Ismael Negron/
Examiner
AU 2885